

SEQUENCE LISTING

<110> Steward, Lance E.  
Fernandez-Salas, Ester  
Aoki, Kei Roger

<120> Fret Protease Assays For Clostridial  
Toxins

<130> P-AR 4802

<160> 96

<170> FastSEQ for Windows Version 4.0

<210> 1  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 1  
Glu Ala Asn Gln Arg Ala Thr Lys  
1 5

<210> 2  
<211> 206  
<212> PRT  
<213> Homo sapiens

<400> 2  
Met Ala Glu Asp Ala Asp Met Arg Asn Glu Leu Glu Glu Met Gln Arg  
1 5 10 15  
Arg Ala Asp Gln Leu Ala Asp Glu Ser Leu Glu Ser Thr Arg Arg Met  
20 25 30  
Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val  
35 40 45  
Met Leu Asp Glu Gln Gly Glu Gln Leu Glu Arg Ile Glu Glu Gly Met  
50 55 60  
Asp Gln Ile Asn Lys Asp Met Lys Glu Ala Glu Lys Asn Leu Thr Asp  
65 70 75 80  
Leu Gly Lys Phe Cys Gly Leu Cys Val Cys Pro Cys Asn Lys Leu Lys  
85 90 95  
Ser Ser Asp Ala Tyr Lys Ala Trp Gly Asn Asn Gln Asp Gly Val  
100 105 110  
Val Ala Ser Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala  
115 120 125

Ile Ser Gly Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn  
130 135 140  
Glu Met Asp Glu Asn Leu Glu Gln Val Ser Gly Ile Ile Gly Asn Leu  
145 150 155 160  
Arg His Met Ala Leu Asp Met Gly Asn Glu Ile Asp Thr Gln Asn Arg  
165 170 175  
Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys Thr Arg Ile  
180 185 190  
Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser Gly  
195 200 205

<210> 3  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 3  
Gly Ala Ser Gln Phe Glu Thr Ser  
1 5

<210> 4  
<211> 116  
<212> PRT  
<213> Homo sapiens

<400> 4  
Met Ser Ala Thr Ala Ala Thr Ala Pro Pro Ala Ala Pro Ala Gly Glu  
1 5 10 15  
Gly Gly Pro Pro Ala Pro Pro Pro Asn Leu Thr Ser Asn Arg Arg Leu  
20 25 30  
Gln Gln Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val  
35 40 45  
Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp  
50 55 60  
Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser  
65 70 75 80  
Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Leu Lys Met Met  
85 90 95  
Ile Ile Leu Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Val  
100 105 110  
Tyr Phe Ser Ser  
115

<210> 5  
<211> 8

<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 5  
Asp Thr Lys Lys Ala Val Lys Trp  
1 5

<210> 6  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 6  
Arg Asp Gln Lys Leu Ser Glu Leu  
1 5

<210> 7  
<211> 206  
<212> PRT  
<213> Rattus sp.

<400> 7  
Met Ala Glu Asp Ala Asp Met Arg Asn Glu Leu Glu Glu Met Gln Arg  
1 5 10 15  
Arg Ala Asp Gln Leu Ala Asp Glu Ser Leu Glu Ser Thr Arg Arg Met  
20 25 30  
Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val  
35 40 45  
Met Leu Asp Glu Gln Gly Glu Gln Leu Glu Arg Ile Glu Glu Gly Met  
50 55 60  
Asp Gln Ile Asn Lys Asp Met Lys Glu Ala Glu Lys Asn Leu Thr Asp  
65 70 75 80  
Leu Gly Lys Phe Cys Gly Leu Cys Val Cys Pro Cys Asn Lys Leu Lys  
85 90 95  
Ser Ser Asp Ala Tyr Lys Lys Ala Trp Gly Asn Asn Gln Asp Gly Val  
100 105 110  
Val Ala Ser Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala  
115 120 125  
Ile Ser Gly Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn  
130 135 140  
Glu Met Asp Glu Asn Leu Glu Gln Val Ser Gly Ile Ile Gly Asn Leu

145	150	155	160
Arg His Met Ala Leu Asp Met Gly Asn Glu Ile Asp Thr Gln Asn Arg			
165	170	175	
Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys Thr Arg Ile			
180	185	190	
Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser Gly			
195	200	205	

<210> 8  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 8  
Gln Ile Asp Arg Ile Met Glu Lys  
1 5

<210> 9  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 9  
Glu Arg Asp Gln Lys Leu Ser Glu  
1 5

<210> 10  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 10  
Glu Thr Ser Ala Ala Lys Leu Lys  
1 5

<210> 11  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 11  
Gly Ala Ser Gln Phe Glu Thr Ser  
1 5

<210> 12  
<211> 206  
<212> PRT  
<213> Mus musculus

<400> 12  
Met Ala Glu Asp Ala Asp Met Arg Asn Glu Leu Glu Glu Met Gln Arg  
1 5 10 15  
Arg Ala Asp Gln Leu Ala Asp Glu Ser Leu Glu Ser Thr Arg Arg Met  
20 25 30  
Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val  
35 40 45  
Met Leu Asp Glu Gln Gly Glu Gln Leu Glu Arg Ile Glu Glu Gly Met  
50 55 60  
Asp Gln Ile Asn Lys Asp Met Lys Glu Ala Glu Lys Asn Leu Thr Asp  
65 70 75 80  
Leu Gly Lys Phe Cys Gly Leu Cys Val Cys Pro Cys Asn Lys Leu Lys  
85 90 95  
Ser Ser Asp Ala Tyr Lys Lys Ala Trp Gly Asn Asn Gln Asp Gly Val  
100 105 110  
Val Ala Ser Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala  
115 120 125  
Ile Ser Gly Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn  
130 135 140  
Glu Met Asp Glu Asn Leu Glu Gln Val Ser Gly Ile Ile Gly Asn Leu  
145 150 155 160  
Arg His Met Ala Leu Asp Met Gly Asn Glu Ile Asp Thr Gln Asn Arg  
165 170 175  
Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys Thr Arg Ile  
180 185 190  
Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser Gly  
195 200 205

<210> 13  
<211> 212  
<212> PRT  
<213> Drosophila sp.

<400> 13

Met Pro Ala Asp Pro Ser Glu Glu Val Ala Pro Gln Val Pro Lys Thr  
1 5 10 15  
Glu Leu Glu Glu Leu Gln Ile Asn Ala Gln Gly Val Ala Asp Glu Ser  
20 25 30  
Leu Glu Ser Thr Arg Arg Met Leu Ala Leu Cys Glu Glu Ser Lys Glu  
35 40 45  
Ala Gly Ile Arg Thr Leu Val Ala Leu Asp Asp Gln Gly Glu Gln Leu  
50 55 60  
Asp Arg Ile Glu Glu Gly Met Asp Gln Ile Asn Ala Asp Met Arg Glu  
65 70 75 80  
Ala Glu Lys Asn Leu Ser Gly Met Glu Lys Cys Cys Gly Ile Cys Val  
85 90 95  
Leu Pro Cys Asn Lys Ser Gln Ser Phe Lys Glu Asp Asp Gly Thr Trp  
100 105 110  
Lys Gly Asn Asp Asp Gly Lys Val Val Asn Asn Gln Pro Gln Arg Val  
115 120 125  
Met Asp Asp Arg Asn Gly Met Met Ala Gln Ala Gly Tyr Ile Gly Arg  
130 135 140  
Ile Thr Asn Asp Ala Arg Glu Asp Glu Met Glu Glu Asn Met Gly Gln  
145 150 155 160  
Val Asn Thr Met Ile Gly Asn Leu Arg Asn Met Ala Leu Asp Met Gly  
165 170 175  
Ser Glu Leu Glu Asn Gln Asn Arg Gln Ile Asp Arg Ile Asn Arg Lys  
180 185 190  
Gly Glu Ser Asn Glu Ala Arg Ile Ala Val Ala Asn Gln Arg Ala His  
195 200 205  
Gln Leu Leu Lys  
210

<210> 14

<211> 203

<212> PRT

<213> Carassius auratus

<400> 14

Met Ala Asp Glu Ala Asp Met Arg Asn Glu Leu Thr Asp Met Gln Ala  
1 5 10 15  
Arg Ala Asp Gln Leu Gly Asp Glu Ser Leu Glu Ser Thr Arg Arg Met  
20 25 30  
Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val  
35 40 45  
Met Leu Asp Glu Gln Gly Glu Gln Leu Glu Arg Ile Glu Glu Gly Met  
50 55 60  
Asp Gln Ile Asn Lys Asp Met Lys Glu Ala Glu Lys Asn Leu Thr Asp  
65 70 75 80  
Leu Gly Asn Leu Cys Gly Leu Cys Pro Cys Pro Cys Asn Lys Leu Lys  
85 90 95  
Gly Gly Gly Gln Ser Trp Gly Asn Asn Gln Asp Gly Val Val Ser Ser  
100 105 110  
Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala Ile Ser Gly  
115 120 125

Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn Glu Met Asp  
130 135 140  
Glu Asn Leu Glu Gln Val Gly Ser Ile Ile Gly Asn Leu Arg His Met  
145 150 155 160  
Ala Leu Asp Met Gly Asn Glu Ile Asp Thr Gln Asn Arg Gln Ile Asp  
165 170 175  
Arg Ile Met Asp Met Ala Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala  
180 185 190  
Asn Gln Arg Ala Thr Lys Met Leu Gly Ser Gly  
195 200

<210> 15  
<211> 212  
<212> PRT  
<213> Strongylocentrotus purpuratus

<400> 15  
Met Glu Asp Gln Asn Asp Met Asn Met Arg Ser Glu Leu Glu Glu Ile  
1 5 10 15  
Gln Met Gln Ser Asn Met Gln Thr Asp Glu Ser Leu Glu Ser Thr Arg  
20 25 30  
Arg Met Leu Gln Met Ala Glu Glu Ser Gln Asp Met Gly Ile Lys Thr  
35 40 45  
Leu Val Met Leu Asp Glu Gln Gly Glu Gln Leu Asp Arg Ile Glu Glu  
50 55 60  
Gly Met Asp Gln Ile Asn Thr Asp Met Arg Glu Ala Glu Lys Asn Leu  
65 70 75 80  
Thr Gly Leu Glu Lys Cys Cys Gly Ile Cys Val Cys Pro Trp Lys Lys  
85 90 95  
Leu Gly Asn Phe Glu Lys Gly Asp Asp Tyr Lys Lys Thr Trp Lys Gly  
100 105 110  
Asn Asp Asp Gly Lys Val Asn Ser His Gln Pro Met Arg Met Glu Asp  
115 120 125  
Asp Arg Asp Gly Cys Gly Asn Ala Ser Met Ile Thr Arg Ile Thr  
130 135 140  
Asn Asp Ala Arg Glu Asp Glu Met Asp Glu Asn Leu Thr Gln Val Ser  
145 150 155 160  
Ser Ile Val Gly Asn Leu Arg His Met Ala Ile Asp Met Gln Ser Glu  
165 170 175  
Ile Gly Ala Gln Asn Ser Gln Val Gly Arg Ile Thr Ser Lys Ala Glu  
180 185 190  
Ser Asn Glu Gly Arg Ile Asn Ser Ala Asp Lys Arg Ala Lys Asn Ile  
195 200 205  
Leu Arg Asn Lys  
210

<210> 16  
<211> 249  
<212> PRT  
<213> Gallus gallus

<400> 16

Met Ala Glu Asp Ala Asp Met Arg Asn Glu Leu Glu Glu Met Gln Arg  
1 5 10 15  
Arg Ala Asp Gln Leu Ala Asp Glu Ser Leu Glu Ser Thr Arg Arg Met  
20 25 30  
Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val  
35 40 45  
Met Leu Asp Glu Gln Gly Glu Gln Leu Asp Arg Val Glu Glu Gly Met  
50 55 60  
Asn His Ile Asn Gln Asp Met Lys Glu Ala Glu Lys Asn Leu Lys Asp  
65 70 75 80  
Leu Gly Lys Cys Cys Gly Leu Phe Ile Cys Pro Cys Asn Lys Leu Lys  
85 90 95  
Ser Ser Asp Ala Tyr Lys Lys Ala Trp Gly Asn Asn Gln Asp Gly Val  
100 105 110  
Val Ala Ser Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala  
115 120 125  
Ile Ser Gly Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn  
130 135 140  
Glu Met Asp Glu Asn Leu Glu Gln Val Ser Gly Ile Ile Gly Asn Leu  
145 150 155 160  
Arg His Met Ala Leu Asp Met Gly Asn Glu Ile Asp Thr Gln Asn Arg  
165 170 175  
Gln Ile Asp Arg Ile Met Glu Lys Leu Ile Pro Ile Lys Pro Gly Leu  
180 185 190  
Met Lys Pro Thr Ser Val Gln Gln Arg Cys Ser Ala Val Val Lys Cys  
195 200 205  
Ser Lys Val His Phe Leu Leu Met Leu Ser Gln Arg Ala Val Pro Ser  
210 215 220  
Cys Phe Tyr His Gly Ile Tyr Leu Leu Gly Leu His Thr Cys Thr Tyr  
225 230 235 240  
Gln Pro His Cys Lys Cys Cys Pro Val  
245

<210> 17

<211> 116

<212> PRT

<213> Mus musculus

<400> 17

Met Ser Ala Thr Ala Ala Thr Val Pro Pro Ala Ala Pro Ala Gly Glu  
1 5 10 15  
Gly Gly Pro Pro Ala Pro Pro Pro Asn Leu Thr Ser Asn Arg Arg Leu  
20 25 30  
Gln Gln Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val  
35 40 45  
Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp  
50 55 60  
Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser  
65 70 75 80  
Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Leu Lys Met Met  
85 90 95

Ile Ile Leu Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Ile Val  
100 105 110  
Tyr Phe Ser Thr  
115

<210> 18  
<211> 116  
<212> PRT  
<213> Bos taurus

<400> 18  
Met Ser Ala Thr Ala Ala Thr Ala Pro Pro Ala Ala Pro Ala Gly Glu  
1 5 10 15  
Gly Gly Pro Pro Ala Pro Pro Pro Asn Leu Thr Ser Asn Arg Arg Leu  
20 25 30  
Gln Gln Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val  
35 40 45  
Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp  
50 55 60  
Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser  
65 70 75 80  
Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Leu Lys Met Met  
85 90 95  
Ile Ile Leu Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Ile Val  
100 105 110  
Tyr Phe Ser Ser  
115

<210> 19  
<211> 114  
<212> PRT  
<213> Xenopus laevis

<400> 19  
Met Ser Ala Pro Ala Ala Gly Pro Pro Ala Ala Pro Gly Asp Gly  
1 5 10 15  
Ala Pro Gln Gly Pro Pro Asn Leu Thr Ser Asn Arg Arg Leu Gln Gln  
20 25 30  
Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val Asn Val  
35 40 45  
Asp Lys Val Leu Glu Arg Asp Thr Lys Leu Ser Glu Leu Asp Asp Arg  
50 55 60  
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala Ala  
65 70 75 80  
Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Met Lys Met Met Ile Ile  
85 90 95  
Met Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Ile Val Tyr Phe  
100 105 110  
Ser Thr

<210> 20  
<211> 104  
<212> PRT  
<213> Strongylocentrotus purpuratus

<400> 20  
Met Ala Ala Pro Pro Pro Gln Pro Ala Pro Ser Asn Lys Arg Leu  
1 5 10 15  
Gln Gln Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val  
20 25 30  
Asn Val Asp Lys Val Leu Glu Arg Asp Gln Ala Leu Ser Val Leu Asp  
35 40 45  
Asp Arg Ala Asp Ala Leu Gln Gln Gly Ala Ser Gln Phe Glu Thr Asn  
50 55 60  
Ala Gly Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Cys Lys Met Met  
65 70 75 80  
Ile Ile Leu Ala Ile Ile Ile Val Ile Leu Ile Ile Ile Ile Val  
85 90 95  
Ala Ile Val Gln Ser Gln Lys Lys  
100

<210> 21  
<211> 288  
<212> PRT  
<213> Homo sapiens

<400> 21  
Met Lys Asp Arg Thr Gln Glu Leu Arg Thr Ala Lys Asp Ser Asp Asp  
1 5 10 15  
Asp Asp Asp Val Ala Val Thr Val Asp Arg Asp Arg Phe Met Asp Glu  
20 25 30  
Phe Phe Glu Gln Val Glu Glu Ile Arg Gly Phe Ile Asp Lys Ile Ala  
35 40 45  
Glu Asn Val Glu Glu Val Lys Arg Lys His Ser Ala Ile Leu Ala Ser  
50 55 60  
Pro Asn Pro Asp Glu Lys Thr Lys Glu Glu Leu Glu Leu Met Ser  
65 70 75 80  
Asp Ile Lys Lys Thr Ala Asn Lys Val Arg Ser Lys Leu Lys Ser Ile  
85 90 95  
Glu Gln Ser Ile Glu Gln Glu Glu Gly Leu Asn Arg Ser Ser Ala Asp  
100 105 110  
Leu Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg Lys Phe Val  
115 120 125  
Glu Val Met Ser Glu Tyr Asn Ala Thr Gln Ser Asp Tyr Arg Glu Arg  
130 135 140  
Cys Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly Arg Thr Thr  
145 150 155 160  
Thr Ser Glu Glu Leu Glu Asp Met Leu Glu Ser Gly Asn Pro Ala Ile  
165 170 175  
Phe Ala Ser Gly Ile Ile Met Asp Ser Ser Ile Ser Lys Gln Ala Leu  
180 185 190

Ser Glu Ile Glu Thr Arg His Ser Glu Ile Ile Lys Leu Glu Asn Ser  
195 200 205  
Ile Arg Glu Leu His Asp Met Phe Met Asp Met Ala Met Leu Val Glu  
210 215 220  
Ser Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val Glu His Ala  
225 230 235 240  
Val Asp Tyr Val Glu Arg Ala Val Ser Asp Thr Lys Lys Ala Val Lys  
245 250 255  
Tyr Gln Ser Lys Ala Arg Arg Lys Lys Ile Met Ile Ile Cys Cys  
260 265 270  
Val Ile Leu Gly Ile Val Ile Ala Ser Thr Val Gly Gly Ile Phe Ala  
275 280 285

<210> 22  
<211> 288  
<212> PRT  
<213> Homo sapiens

<400> 22  
Met Lys Asp Arg Thr Gln Glu Leu Arg Ser Ala Lys Asp Ser Asp Asp  
1 5 10 15  
Glu Glu Glu Val Val His Val Asp Arg Asp His Phe Met Asp Glu Phe  
20 25 30  
Phe Glu Gln Val Glu Glu Ile Arg Gly Cys Ile Glu Lys Leu Ser Glu  
35 40 45  
Asp Val Glu Gln Val Lys Lys Gln His Ser Ala Ile Leu Ala Ala Pro  
50 55 60  
Asn Pro Asp Glu Lys Thr Lys Gln Glu Leu Glu Asp Leu Thr Ala Asp  
65 70 75 80  
Ile Lys Lys Thr Ala Asn Lys Val Arg Ser Lys Leu Lys Ala Ile Glu  
85 90 95  
Gln Ser Ile Glu Gln Glu Glu Gly Leu Asn Arg Ser Ser Ala Asp Leu  
100 105 110  
Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg Lys Phe Val Glu  
115 120 125  
Val Met Thr Glu Tyr Asn Ala Thr Gln Ser Lys Tyr Arg Asp Arg Cys  
130 135 140  
Lys Asp Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly Arg Thr Thr Thr  
145 150 155 160  
Asn Glu Glu Leu Glu Asp Met Leu Glu Ser Gly Lys Leu Ala Ile Phe  
165 170 175  
Thr Asp Asp Ile Lys Met Asp Ser Gln Met Thr Lys Gln Ala Leu Asn  
180 185 190  
Glu Ile Glu Thr Arg His Asn Glu Ile Ile Lys Leu Glu Thr Ser Ile  
195 200 205  
Arg Glu Leu His Asp Met Phe Val Asp Met Ala Met Leu Val Glu Ser  
210 215 220  
Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val Glu His Ser Val  
225 230 235 240  
Asp Tyr Val Glu Arg Ala Val Ser Asp Thr Lys Lys Ala Val Lys Tyr  
245 250 255  
Gln Ser Lys Ala Arg Arg Lys Lys Ile Met Ile Ile Cys Cys Val

260	265	270
Val Leu Gly Val Val Leu Ala Ser Ser Ile Gly Gly Thr Leu Gly Leu		
275	280	285

<210> 23  
<211> 288  
<212> PRT  
<213> Mus musculus

<400> 23

Met Lys Asp Arg Thr Gln Glu Leu Arg Thr Ala Lys Asp Ser Asp Asp		
1	5	10
Asp Asp Asp Val Thr Val Thr Val Asp Arg Asp Arg Phe Met Asp Glu		
20	25	30
Phe Phe Gln Val Glu Glu Ile Arg Gly Phe Ile Asp Lys Ile Ala		
35	40	45
Glu Asn Val Glu Glu Val Lys Arg Lys His Ser Ala Ile Leu Ala Ser		
50	55	60
Pro Asn Pro Asp Glu Lys Thr Lys Glu Glu Leu Glu Glu Leu Met Ser		
65	70	75
Asp Ile Lys Lys Thr Ala Asn Lys Val Arg Ser Lys Leu Lys Ser Ile		
85	90	95
Glu Gln Ser Ile Glu Gln Glu Glu Gly Leu Asn Arg Ser Ser Ala Asp		
100	105	110
Leu Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg Lys Phe Val		
115	120	125
Glu Val Met Ser Glu Tyr Asn Ala Thr Gln Ser Asp Tyr Arg Glu Arg		
130	135	140
Cys Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly Arg Thr Thr		
145	150	155
Thr Ser Glu Glu Leu Asp Met Leu Glu Ser Gly Asn Pro Ala Ile		
165	170	175
Phe Ala Ser Gly Ile Ile Met Asp Ser Ser Ile Ser Lys Gln Ala Leu		
180	185	190
Ser Glu Ile Glu Thr Arg His Ser Glu Ile Ile Lys Leu Glu Thr Ser		
195	200	205
Ile Arg Glu Leu His Asp Met Phe Met Asp Met Ala Met Leu Val Glu		
210	215	220
Ser Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val Glu His Ala		
225	230	235
Val Asp Tyr Val Glu Arg Ala Val Ser Asp Thr Lys Lys Ala Val Lys		
245	250	255
Tyr Gln Ser Lys Ala Arg Arg Lys Lys Ile Met Ile Ile Ile Cys Cys		
260	265	270
Val Ile Leu Gly Ile Ile Ile Ala Ser Thr Ile Gly Gly Ile Phe Gly		
275	280	285

<210> 24  
<211> 291  
<212> PRT  
<213> Drosophila sp.

<400> 24

Met Thr Lys Asp Arg Leu Ala Ala Leu His Ala Ala Gln Ser Asp Asp  
1 5 10 15  
Glu Glu Glu Thr Glu Val Ala Val Asn Val Asp Gly His Asp Ser Tyr  
20 25 30  
Met Asp Asp Phe Phe Ala Gln Val Glu Glu Ile Arg Gly Met Ile Asp  
35 40 45  
Lys Val Gln Asp Asn Val Glu Glu Val Lys Lys His Ser Ala Ile  
50 55 60  
Leu Ser Ala Pro Gln Thr Asp Glu Lys Thr Lys Gln Glu Leu Glu Asp  
65 70 75 80  
Leu Met Ala Asp Ile Lys Lys Asn Ala Asn Arg Val Arg Gly Lys Leu  
85 90 95  
Lys Gly Ile Glu Gln Asn Ile Glu Gln Glu Glu Gln Gln Asn Lys Ser  
100 105 110  
Ser Ala Asp Leu Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg  
115 120 125  
Lys Phe Val Glu Val Met Thr Glu Tyr Asn Arg Thr Gln Thr Asp Tyr  
130 135 140  
Arg Glu Arg Cys Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly  
145 150 155 160  
Arg Pro Thr Asn Asp Asp Glu Leu Glu Lys Met Leu Glu Glu Gly Asn  
165 170 175  
Ser Ser Val Phe Thr Gln Gly Ile Ile Met Glu Thr Gln Gln Ala Lys  
180 185 190  
Gln Thr Leu Ala Asp Ile Glu Ala Arg His Gln Asp Ile Met Lys Leu  
195 200 205  
Glu Thr Ser Ile Lys Glu Leu His Asp Met Phe Met Asp Met Ala Met  
210 215 220  
Leu Val Glu Ser Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr His Val  
225 230 235 240  
Glu His Ala Met Asp Tyr Val Gln Thr Ala Thr Gln Asp Thr Lys Lys  
245 250 255  
Ala Leu Lys Tyr Gln Ser Lys Ala Arg Arg Lys Lys Ile Met Ile Leu  
260 265 270  
Ile Cys Leu Thr Val Leu Gly Ile Leu Ala Ala Ser Tyr Val Ser Ser  
275 280 285  
Tyr Phe Met  
290

<210> 25

<211> 291

<212> PRT

<213> Caenorhabditis elegans

<400> 25

Met Thr Lys Asp Arg Leu Ser Ala Leu Lys Ala Ala Gln Ser Glu Asp  
1 5 10 15  
Glu Gln Asp Asp Asp Met His Met Asp Thr Gly Asn Ala Gln Tyr Met  
20 25 30  
Glu Glu Phe Phe Glu Gln Val Glu Glu Ile Arg Gly Ser Val Asp Ile

35	40	45
Ile Ala Asn Asn Val Glu Glu Val Lys Lys His Ser Ala Ile Leu		
50	55	60
Ser Asn Pro Val Asn Asp Gln Lys Thr Lys Glu Glu Leu Asp Glu Leu		
65	70	75
Met Ala Val Ile Lys Arg Ala Ala Asn Lys Val Arg Gly Lys Leu Lys		
85	90	95
Leu Ile Glu Asn Ala Ile Asp His Asp Glu Gln Gly Ala Gly Asn Ala		
100	105	110
Asp Leu Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg Arg Phe		
115	120	125
Val Glu Val Met Thr Asp Tyr Asn Lys Thr Gln Thr Asp Tyr Arg Glu		
130	135	140
Arg Cys Lys Gly Arg Ile Gln Arg Gln Leu Asp Ile Ala Gly Lys Gln		
145	150	155
Val Gly Asp Glu Asp Leu Glu Glu Met Ile Glu Ser Gly Asn Pro Gly		
165	170	175
Val Phe Thr Gln Gly Ile Ile Thr Asp Thr Gln Gln Ala Lys Gln Thr		
180	185	190
Leu Ala Asp Ile Glu Ala Arg His Asn Asp Ile Met Lys Leu Glu Ser		
195	200	205
Ser Ile Arg Glu Leu His Asp Met Phe Met Asp Met Ala Met Leu Val		
210	215	220
Glu Ser Gln Gly Glu Met Val Asp Arg Ile Glu Tyr Asn Val Glu His		
225	230	235
Ala Lys Glu Phe Val Asp Arg Ala Val Ala Asp Thr Lys Lys Ala Val		
245	250	255
Gln Tyr Gln Ser Lys Ala Arg Arg Lys Lys Ile Cys Ile Leu Val Thr		
260	265	270
Gly Val Ile Leu Ile Thr Gly Leu Ile Ile Phe Ile Leu Phe Tyr Ala		
275	280	285
Lys Val Leu		
290		

<210> 26  
<211> 288  
<212> PRT  
<213> Strongylocentrotus purpuratus

<400> 26

Met Arg Asp Arg Leu Gly Ser Leu Lys Arg Asn Glu Glu Asp Asp Val		
1	5	10
15		
Gly Pro Glu Val Ala Val Asn Val Glu Ser Glu Lys Phe Met Glu Glu		
20	25	30
Phe Phe Glu Gln Val Glu Val Arg Asn Asn Ile Asp Lys Ile Ser		
35	40	45
Lys Asn Val Asp Glu Val Lys Lys Lys His Ser Asp Ile Leu Ser Ala		
50	55	60
Pro Gln Ala Asp Glu Lys Val Lys Asp Glu Leu Glu Glu Leu Met Ser		
65	70	75
Asp Ile Lys Lys Thr Ala Asn Lys Val Arg Ala Lys Leu Lys Met Met		
85	90	95

Glu Gln Ser Ile Glu Gln Glu Ser Ala Lys Met Asn Ser Ala Asp  
100 105 110  
Val Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg Lys Phe Val  
115 120 125  
Glu Val Met Thr Asp Tyr Asn Ser Thr Gln Thr Asp Tyr Arg Glu Arg  
130 135 140  
Cys Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly Lys Ser Thr  
145 150 155 160  
Thr Asp Ala Glu Leu Glu Asp Met Leu Glu Ser Gly Asn Pro Ala Ile  
165 170 175  
Phe Thr Ser Gly Ile Ile Met Asp Thr Gln Gln Ala Lys Gln Thr Leu  
180 185 190  
Arg Asp Ile Glu Ala Arg His Asn Asp Ile Ile Lys Leu Glu Ser Ser  
195 200 205  
Ile Arg Glu Leu His Asp Met Phe Met Asp Met Ala Met Leu Val Glu  
210 215 220  
Ser Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr Asn Val Glu Gln Ser  
225 230 235 240  
Val Asp Tyr Val Glu Thr Ala Lys Met Asp Thr Lys Lys Ala Val Lys  
245 250 255  
Tyr Gln Ser Lys Ala Arg Arg Lys Lys Phe Tyr Ile Ala Ile Cys Cys  
260 265 270  
Gly Val Ala Leu Gly Ile Leu Val Leu Val Leu Ile Ile Val Leu Ala  
275 280 285

<210> 27

<211> 13

<212> PRT

<213> Homo sapiens

<400> 27

Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met  
1 5 10

<210> 28

<211> 15

<212> PRT

<213> Homo sapiens

<400> 28

Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys  
1 5 10 15

<210> 29

<211> 16

<212> PRT

<213> Homo sapiens

<400> 29

Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met

1

5

10

15

<210> 30

<211> 17

<212> PRT

<213> Homo sapiens

<400> 30

Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met  
1 5 10 15

Leu

<210> 31

<211> 17

<212> PRT

<213> Homo sapiens

<400> 31

Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys  
1 5 10 15

Met

<210> 32

<211> 18

<212> PRT

<213> Homo sapiens

<400> 32

Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys  
1 5 10 15

Met Leu

<210> 33

<211> 33

<212> PRT

<213> Mus musculus

<400> 33

Gln Asn Arg Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys  
1 5 10 15

Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser  
20 25 30

Gly

<210> 34  
<211> 32  
<212> PRT  
<213> Homo sapiens

<400> 34  
Gln Asn Pro Gln Ile Lys Arg Ile Thr Asp Lys Ala Asp Thr Asn Arg  
1 5 10 15  
Asp Arg Ile Asp Ile Ala Asn Ala Arg Ala Lys Lys Leu Ile Asp Ser  
20 25 30

<210> 35  
<211> 32  
<212> PRT  
<213> Mus musculus

<400> 35  
Gln Asn Gln Gln Ile Gln Lys Ile Thr Glu Lys Ala Asp Thr Asn Lys  
1 5 10 15  
Asn Arg Ile Asp Ile Ala Asn Thr Arg Ala Lys Lys Leu Ile Asp Ser  
20 25 30

<210> 36  
<211> 34  
<212> PRT  
<213> Gallus gallus

<400> 36  
Gln Asn Arg Gln Ile Asp Arg Ile Met Glu Lys Leu Ile Pro Ile Lys  
1 5 10 15  
Pro Gly Leu Met Lys Pro Thr Ser Val Gln Gln Arg Cys Ser Ala Val  
20 25 30  
Val Lys

<210> 37  
<211> 33  
<212> PRT  
<213> Carassius auratus

<400> 37  
Gln Asn Arg Gln Ile Asp Arg Ile Met Asp Met Ala Asp Ser Asn Lys  
1 5 10 15  
Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser  
20 25 30  
Gly

<210> 38

<211> 33  
<212> PRT  
<213> Carassius auratus

<400> 38  
Gln Asn Arg Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys  
1 5 10 15  
Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser  
20 25 30  
Gly

<210> 39  
<211> 30  
<212> PRT  
<213> Torpedo sp.

<400> 39  
Gln Asn Ala Gln Val Asp Arg Ile Val Val Lys Gly Asp Met Asn Lys  
1 5 10 15  
Ala Arg Ile Asp Glu Ala Asn Lys His Ala Thr Lys Met Leu  
20 25 30

<210> 40  
<211> 33  
<212> PRT  
<213> Strongylocentrotus purpuratus

<400> 40  
Gln Asn Ser Gln Val Gly Arg Ile Thr Ser Lys Ala Glu Ser Asn Glu  
1 5 10 15  
Gly Arg Ile Asn Ser Ala Asp Lys Arg Ala Lys Asn Ile Leu Arg Asn  
20 25 30  
Lys

<210> 41  
<211> 31  
<212> PRT  
<213> Caenorhabditis elegans

<400> 41  
Gln Asn Arg Gln Leu Asp Arg Ile His Asp Lys Gln Ser Asn Glu Val  
1 5 10 15  
Arg Val Glu Ser Ala Asn Lys Arg Ala Lys Asn Leu Ile Thr Lys  
20 25 30

<210> 42  
<211> 31

<212> PRT

<213> Drosophila sp.

<400> 42

Gln Asn Arg Gln Ile Asp Arg Ile Asn Arg Lys Gly Glu Ser Asn Glu  
1 5 10 15  
Ala Arg Ile Ala Val Ala Asn Gln Arg Ala His Gln Leu Leu Lys  
20 25 30

<210> 43

<211> 32

<212> PRT

<213> Hirudinida sp.

<400> 43

Gln Asn Arg Gln Val Asp Arg Ile Asn Asn Lys Met Thr Ser Asn Gln  
1 5 10 15  
Leu Arg Ile Ser Asp Ala Asn Lys Arg Ala Ser Lys Leu Leu Lys Glu  
20 25 30

<210> 44

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 44

Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Ala  
1 5 10 15  
Leu

<210> 45

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<221> MOD\_RES

<222> 16

<223> Xaa=Nle

<400> 45

Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Xaa  
1 5 10 15  
Leu

<210> 46  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<400> 46  
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Ala Met  
1 5 10 15  
Leu

<210> 47  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<400> 47  
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Ser Lys Met  
1 5 10 15  
Leu

<210> 48  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 14  
<223> Xaa=Abu

<400> 48  
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Xaa Lys Met  
1 5 10 15  
Leu

<210> 49

<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 13  
<223> Xaa=Abu

<400> 49  
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Xaa Thr Lys Met  
1 5 10 15  
Leu

<210> 50  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<400> 50  
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Ala Arg Ala Thr Lys Met  
1 5 10 15  
Leu

<210> 51  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 11  
<223> Xaa=Abu

<400> 51  
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Xaa Ala Thr Lys Met Leu  
1 5 10 15

<210> 52  
<211> 17  
<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 52

Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Asn Arg Ala Thr Lys Met  
1 5 10 15  
Leu

<210> 53

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 53

Ser Asn Lys Thr Arg Ile Asp Glu Ala Ala Gln Arg Ala Thr Lys Met  
1 5 10 15  
Leu

<210> 54

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<221> MOD\_RES

<222> 9

<223> Xaa=Abu

<400> 54

Ser Asn Lys Thr Arg Ile Asp Glu Xaa Asn Gln Arg Ala Thr Lys Met  
1 5 10 15  
Leu

<210> 55

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 55

Ser Asn Lys Thr Arg Ile Asp Gln Ala Asn Gln Arg Ala Thr Lys Met  
1 5 10 15  
Leu

<210> 56

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 56

Ser Asn Lys Thr Arg Ile Asn Glu Ala Asn Gln Arg Ala Thr Lys Met  
1 5 10 15  
Leu

<210> 57

<211> 40

<212> PRT

<213> Homo sapiens

<400> 57

Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg  
1 5 10 15  
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ser Ser Ala Ala  
20 25 30  
Lys Leu Lys Arg Lys Tyr Trp Trp  
35 40

<210> 58

<211> 40

<212> PRT

<213> Bos taurus

<400> 58

Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg  
1 5 10 15  
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala Ala  
20 25 30  
Lys Leu Lys Arg Lys Tyr Trp Trp  
35 40

<210> 59

<211> 40

<212> PRT

<213> Rattus sp.

<400> 59

Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg  
1 5 10 15  
Ala Asp Ala Leu Gln Ala Gly Ala Ser Val Phe Glu Ser Ser Ala Ala  
20 25 30  
Lys Leu Lys Arg Lys Tyr Trp Trp  
35 40

<210> 60

<211> 40

<212> PRT

<213> Rattus sp.

<400> 60

Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg  
1 5 10 15  
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala Ala  
20 25 30  
Lys Leu Lys Arg Lys Tyr Trp Trp  
35 40

<210> 61

<211> 40

<212> PRT

<213> Rattus sp.

<400> 61

Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg  
1 5 10 15  
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala Ala  
20 25 30  
Lys Leu Lys Arg Lys Tyr Trp Trp  
35 40

<210> 62

<211> 40

<212> PRT

<213> Rattus sp.

<400> 62

Asp Leu Val Ala Gln Arg Gly Glu Arg Leu Glu Leu Ile Asp Lys  
1 5 10 15  
Thr Glu Asn Leu Val Asp Ser Ser Val Thr Phe Lys Thr Thr Ser Arg  
20 25 30  
Asn Leu Ala Arg Ala Met Cys Met  
35 40

<210> 63  
<211> 32  
<212> PRT  
<213> Gallus gallus

<400> 63  
Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg Ala Asp Ala Leu  
1 5 10 15  
Gln Ala Gly Ala Ser Val Phe Glu Ser Ser Ala Ala Lys Leu Lys Arg  
20 25 30

<210> 64  
<211> 32  
<212> PRT  
<213> Gallus gallus

<400> 64  
Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg Ala Asp Ala Leu  
1 5 10 15  
Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala Ala Lys Leu Lys Arg  
20 25 30

<210> 65  
<211> 40  
<212> PRT  
<213> Torpedo sp.

<400> 65  
Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg  
1 5 10 15  
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ser Ser Ala Ala  
20 25 30  
Lys Leu Lys Arg Lys Tyr Trp Trp  
35 40

<210> 66  
<211> 40  
<212> PRT  
<213> Strongylocentrotus purpuratus

<400> 66  
Asp Lys Val Leu Asp Arg Asp Gly Ala Leu Ser Val Leu Asp Asp Arg  
1 5 10 15  
Ala Asp Ala Leu Gln Gln Gly Ala Ser Gln Phe Glu Thr Asn Ala Gly  
20 25 30  
Lys Leu Lys Arg Lys Tyr Trp Trp  
35 40

<210> 67  
<211> 40  
<212> PRT  
<213> Aplysia sp.

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<400> 67
Glu Lys Val Leu Asp Arg Asp Gln Lys Ile Ser Gln Leu Asp Asp Arg
   1           5           10          15
Ala Glu Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ala Ser Ala Gly
   20          25          30
Lys Leu Lys Arg Lys Tyr Trp Trp
   35          40

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<210> 68  
<211> 40  
<212> PRT  
<213> Teuthoida sp.

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<400> 68
Asp Lys Val Leu Glu Arg Asp Ser Lys Ile Ser Glu Leu Asp Asp Arg
   1           5           10          15
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ala Ser Ala Gly
   20          25          30
Lys Leu Lys Arg Lys Phe Trp Trp
   35          40

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<210> 69  
<211> 40  
<212> PRT  
<213> *Caenorhabditis elegans*

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<400> 69
Asn Lys Val Met Glu Arg Asp Val Gln Leu Asn Ser Leu Asp His Arg
   1           5           10          15
Ala Glu Val Leu Gln Asn Gly Ala Ser Gln Phe Gln Gln Ser Ser Arg
   20          25          30
Glu Leu Lys Arg Gln Tyr Trp Trp
   35          40

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<210> 70  
<211> 40  
<212> PRT  
<213> *Drosophila* sp.

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<400> 70
Glu Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Gly Glu Arg
   1           5           10          15
Ala Asp Gln Leu Glu Gly Gly Ala Ser Gln Ser Glu Gln Gln Ala Gly
   20          25          30
Lys Leu Lys Arg Lys Gln Trp Trp

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35

40

<210> 71

<211> 40

<212> PRT

<213> Drosophila sp.

<400> 71

Glu Lys Val Leu Glu Arg Asp Ser Lys Leu Ser Glu Leu Asp Asp Arg  
1 5 10 15  
Ala Asp Ala Leu Gln Gln Gly Ala Ser Gln Phe Glu Gln Gln Ala Gly  
20 25 30  
Lys Leu Lys Arg Lys Phe Trp Leu  
35 40

<210> 72

<211> 39

<212> PRT

<213> Hirudinida sp.

<400> 72

Asp Lys Val Leu Glu Lys Asp Gln Lys Leu Ala Glu Leu Asp Arg Ala  
1 5 10 15  
Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ala Ser Ala Gly Lys  
20 25 30  
Leu Lys Arg Lys Phe Trp Trp  
35

<210> 73

<211> 18

<212> PRT

<213> Homo sapiens

<400> 73

Glu Arg Ala Val Ser Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys  
1 5 10 15  
Ala Arg

<210> 74

<211> 18

<212> PRT

<213> Bos taurus

<400> 74

Glu Arg Ala Val Ser Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys  
1 5 10 15  
Ala Arg

<210> 75  
<211> 18  
<212> PRT  
<213> Rattus sp.

<400> 75  
Glu His Ala Lys Glu Glu Thr Lys Lys Ala Ile Lys Tyr Gln Ser Lys  
1 5 10 15  
Ala Arg

<210> 76  
<211> 18  
<212> PRT  
<213> Rattus sp.

<400> 76  
Glu Lys Ala Arg Asp Glu Thr Arg Lys Ala Met Lys Tyr Gln Gly Gly  
1 5 10 15  
Ala Arg

<210> 77  
<211> 18  
<212> PRT  
<213> Rattus sp.

<400> 77  
Glu Arg Gly Gln Glu His Val Lys Ile Ala Leu Glu Asn Gln Lys Lys  
1 5 10 15  
Ala Arg

<210> 78  
<211> 18  
<212> PRT  
<213> Gallus gallus

<400> 78  
Val Pro Glu Val Phe Val Thr Lys Ser Ala Val Met Tyr Gln Cys Lys  
1 5 10 15  
Ser Arg

<210> 79  
<211> 18  
<212> PRT

<213> Strongylocentrotus purpuratus

<400> 79

Val Arg Arg Gln Asn Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys  
1 5 10 15  
Ala Arg

<210> 80

<211> 18

<212> PRT

<213> Aplysia sp.

<400> 80

Glu Thr Ala Lys Met Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys  
1 5 10 15  
Ala Arg

Drosophila melanogaster

<210> 81

<211> 18

<212> PRT

<213> Teuthoida sp.

<400> 81

Glu Thr Ala Lys Val Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys  
1 5 10 15  
Ala Arg

<210> 82

<211> 18

<212> PRT

<213> Drosophila sp.

<400> 82

Gln Thr Ala Thr Gln Asp Thr Lys Lys Ala Leu Lys Tyr Gln Ser Lys  
1 5 10 15  
Ala Arg

<210> 83

<211> 18

<212> PRT

<213> Hirudinida sp.

<400> 83

Glu Thr Ala Ala Ala Asp Thr Lys Lys Ala Met Lys Tyr Gln Ser Ala  
1 5 10 15

Ala Arg

<210> 84  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<400> 84  
Gly Gly Gly Gly Ser  
1 5

<210> 85  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<221> MOD\_RES  
<222> 1  
<223> Xaa=fluorescein-modified lysine

<221> MOD\_RES  
<222> 20  
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 85  
Xaa Asp Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys  
1 5 10 15  
Met Leu Xaa

<210> 86  
<211> 13  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<221> MOD\_RES

<222> 1  
<223> Xaa=fluorescein-modified lysine

<400> 86  
Xaa Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln  
1 5 10

<210> 87  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic construct

<221> MOD\_RES  
<222> 7  
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 87  
Arg Ala Thr Lys Met Leu Xaa  
1 5

<210> 88  
<211> 23  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 1  
<223> Xaa=fluorescein-modified lysine

<221> MOD\_RES  
<222> 23  
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 88  
Xaa Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr  
1 5 10 15  
Lys Met Leu Gly Ser Gly Xaa

20

<210> 89  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 1  
<223> Xaa=fluorescein-modified lysine

<221> MOD\_RES  
<222> 21  
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 89  
Xaa Ala Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala  
1 5 10 15  
Thr Lys Met Leu Xaa  
20

<210> 90  
<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 1  
<223> Xaa=fluorescein-modified lysine

<221> MOD\_RES  
<222> 24  
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 90  
Xaa Ala Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala  
1 5 10 15

Thr Lys Met Leu Gly Ser Gly Xaa  
20

<210> 91  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 1  
<223> Xaa=fluorescein-modified lysine

<221> MOD\_RES  
<222> 16  
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 91  
Xaa Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Xaa  
1 5 10 15

<210> 92  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 1  
<223> Xaa=fluorescein-modified lysine

<221> MOD\_RES  
<222> 19  
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 92  
Xaa Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly  
1 5 10 15  
Ser Gly Xaa

<210> 93  
<211> 22  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 1  
<223> Xaa=fluorescein-modified lysine

<221> MOD\_RES  
<222> 22  
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 93  
Xaa Met Glu Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys  
1 5 10 15  
Met Leu Gly Ser Gly Xaa  
20

<210> 94  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 1  
<223> Xaa-DABCYL modified lysine

<221> MOD\_RES  
<222> 16  
<223> Xaa=EDANS modified glutamate

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 94  
Xaa Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Xaa

1

5

10

15

<210> 95  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> synthetic peptide

<221> MOD\_RES  
<222> 1  
<223> Xaa=DABCYL modified lysine

<221> MOD\_RES  
<222> 19  
<223> Xaa=EDANS modified lysine

<221> AMIDATION  
<222> (0)...(0)  
<223> at the C-terminal

<400> 95  
Xaa Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly  
1 5 10 15  
Ser Gly Xaa

<210> 96  
<211> 118  
<212> PRT  
<213> Homo sapiens

<400> 96  
Met Ser Ala Pro Ala Gln Pro Pro Ala Glu Gly Thr Glu Gly Thr Ala  
1 5 10 15  
Pro Gly Gly Pro Pro Gly Pro Pro Pro Asn Met Thr Ser Asn Arg  
20 25 30  
Arg Leu Gln Gln Thr Gln Ala Gln Val Glu Glu Val Val Asp Ile Ile  
35 40 45  
Arg Val Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu  
50 55 60  
Leu Asp Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu  
65 70 75 80  
Ser Ser Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Cys Lys  
85 90 95  
Met Met Ile Met Leu Gly Ala Ile Cys Ala Ile Ile Val Val Val Ile  
100 105 110  
Val Ile Tyr Phe Phe Thr  
115